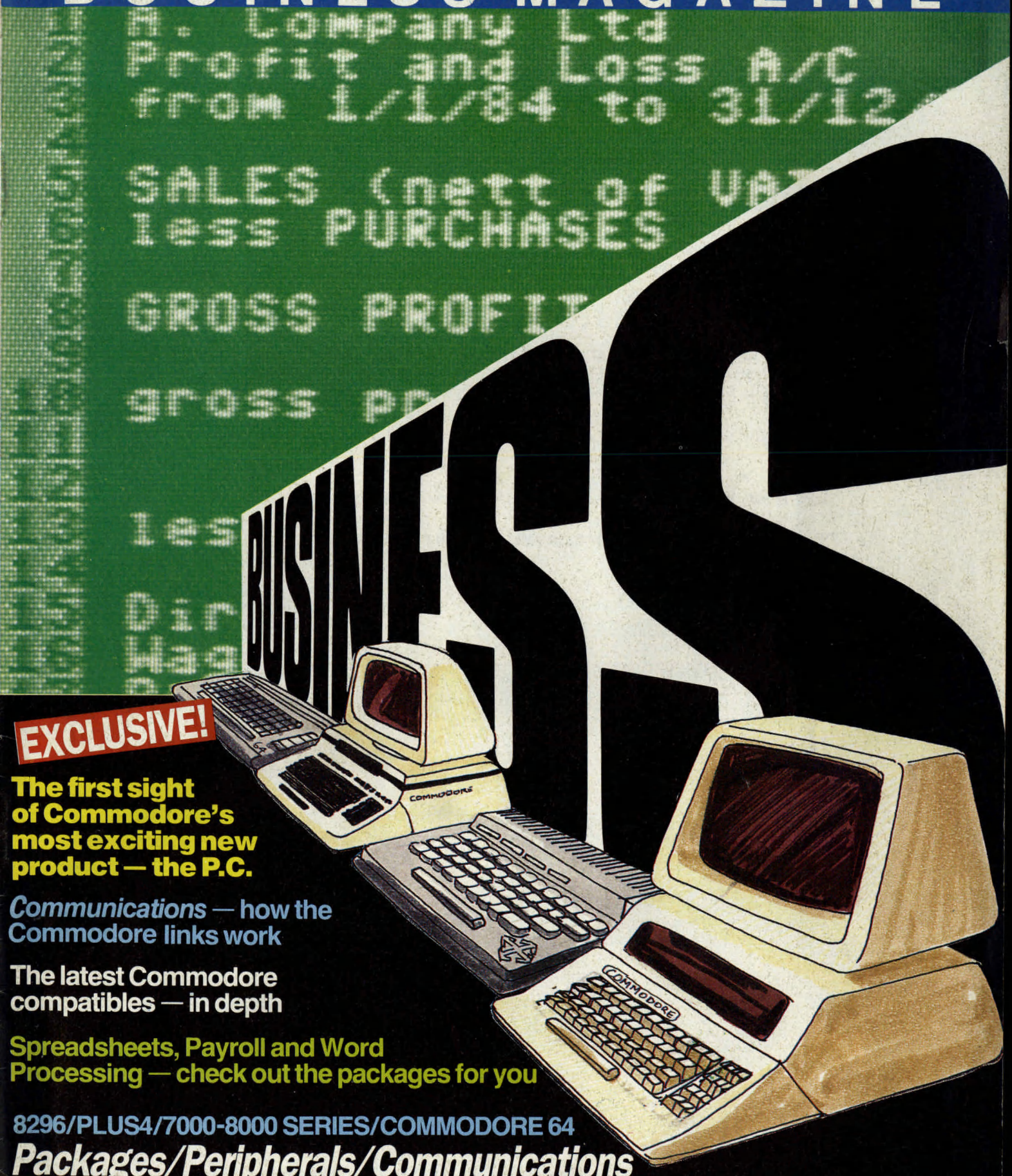
COMMODORE

COMPUTING INTERNATIONAL/MARCH 1985

BUSINESS MAGAZINE



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Commodore goes for the PC market

Commodore left no doubt about its aggressive drive back into the business computer world with the recent unveiling of the new Commodore PC at the "Which Computer" Show in Birmingham.

The 16-bit computer, Commodore's first departure from its traditionally PET-based technology, is part of an overall long term strategy, says UK marketing manager David Gerrard.

"This machine marks the beginning of a carefully-planned programme for Commodore business systems, which will take us into the late '80s," he says. "That programme involves not only a range of advanced new products, but also the structured development of new and existing channels of distribution and the formation of a dedicated support operation here in Corby to back them up."

Featuring a 360K RAM that can be expanded to 640K, a 12-inch black and white monitor and 5.25 inch floppy disk drive, the Commodore PC will be "very aggressively priced," says Commodore, though the company won't disclose the cost yet. An RS232-Centronics interface is built into the unit and Commodore says it already has tested 150 packages for it, not to mention the PC software visitors to the stand brought with them, all of which worked as it should on the compatible machine.

An exclusive peek at the impressive new Commodore PC shown recently at the Which Computer Show in Birmingham and due for launch in the Spring.

(Left: David Gerrard, UK Marketing Manager. Right: Mark Horne, Business Systems and Communications Manager)

CBM says the newest addition to its family will be manufactured in West Germany along with the other business-oriented software. Customers will have an option for a colour monitor and hard disk drive, each of which cost extra.

To support the recharged business leaning, Commodore has formed a business systems marketing team headed by Gerrard and including sales manager Paul Welch and assistant product manager Mark Horne. The team's priorities at this point are to push the new machine and build up support by other software and hardware manufacturers.

"A number of companies have already demonstrated considerable interest in the PC, and we're still on the lookout for more," Gerrard says.

Gerrard says part of the reason Commodore temporarily seemed to drop out of the business market was its success in the home computer area. Spearheaded by the unparalleled popularity of the C64, this success undoubtedly took company priorities with it. But a Commodore spokesman says the company "has never forgotten its birthright."

The beginnings — 1981 PC

When IBM launched its PC in the US in 1981, it shook the whole small business computer market. The IBM reputation made owning an "executive" computer a reality for the first time for larger companies and brought the smaller business within range of the world leader's product.

The PC, already "smuggled" into the UK in small numbers, was introduced officially to Britain in January '83. Immediately it picked up more than 30 percent of the 'small' computer market.

Where IBM goes, others follow ... and many companies jumped onto the PC standard bandwagon. But it was not so easy to challenge Big Blue and about 50 computer companies that introduced PC machines have now withdrawn bruised from the market.

The great advantage of the PC, even the non-IBM machines, is the amount of software available. It is said that one new package is launched every day and there may be upwards of 500 of varying quality on the market. Even IBM got in on the act; it now has its own series of word processing, filing, graphics and spreadsheet software.

The basis of IBM's PC success, however, has been based, as ever, on its marketing power. It markets the PC itself through dealers — previously used only for IBM's typewriters — and through an increasing number of retail shops.

The newest IBM PC, the AT, retails between about £3,000 and £4,300. Any PC Commodore sells will have to be at least 10 percent cheaper to challenge the market leader successfully.

In this issue:

Getting into the PC act
Update on Compunet
A complete communications package from Prism
Spreadsheets, payroll packages taken to task on a checklist
Grappling with an interface
Two business packages face stringent testing
Something for the entrepreneur and forecaster in you
Wordcraft word processor in use
reporting on two major exhibitions and what you didn't see of Commodore

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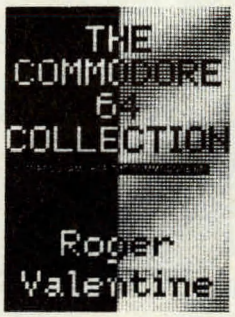

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OCLI Europe, based in Buckinghamshire, made the most of its Space Shuttle connections to promote a special filter panel for monitor screens. Though the publicity seemed a bit much, the product may be worth it.

The Glare/Guard panel is made of laminated glass and fitted with a neutral density filter to enhance contrast. The filter's photopic HEA coating was first used for high altitude military aircraft, OCLI says, and significantly reduces eyestrain, headaches and fatigue connected with using CRTs. Glare/Guard attaches with self adhesive strips.

No matter how clear the filter makes your copy, even Glare/Guard get dirty. But OCLI have taken care of that too. The Glare/Guard cleaner dissolves VDU screen muck including fingerprints (Shame on you!). The kit includes a pump atomiser, two non-pressurised bottles of cleaner and 75 lint-free wipes at a cost of £12.99 plus VAT.

Contact: OCLI Europe, 621 London Road, High Wycombe, Bucks HP11 1ET. Tel: 0494 36286.

COMPUTERS IN THE CITY

Focus on communication

With the slogan "1985 — The revolution continues..." communications was the major focus of many exhibitors at Computers in the City due to the stress on financial management systems. A related conference, sponsored by The Stock Exchange, discussed the wide availability and advantages of telecommunications in finance.

The more than 100 finance-related companies there included Dow Jones News/Retrieval, a system of financial and general news database compiled from The Wall Street Journal, Barron's and Dow Jones News Service. In addition to stock quotes and information about publicly-held companies, the service gives the user updated news sports, weather, movie reviews, a shop-at-home facility and a type of encyclopedia.

Already boasting more than 170,000 users, Dow Jones News/Retrieval also offers a mail service and consumer information. Much of the information concerns companies either based or dealing in the US since the service is compiled by an American concern. Commodore users will need to research thoroughly, however, to be sure they have the necessary equipment to access DJN/R, including proper software and an asynchronous modem. Charge is $1 per minute for any database while you are connected to it with no minimum charge. For UK customers, British Telecom adds a charge of 45 pence per minute.

The system has been on-line since 1974, but the first firms using it were mainly brokerage houses. A company spokeswoman at the exhibition said more than 5,000 new customers were being added each month.

Contact: The Dow Jones News/Retrieval, Customer Service, PO Box 300, Princeton, NJ 08540. Tel: 800-257 5114.

On The Line

For teletype compatible systems, London based Finsbury Data Services introduced its Newsline and Textline services. Both are compilations of news and information produced by FDS in summary form from a variety of sources, particularly newspapers and magazines, throughout the world with a concentration in the UK and western Europe.

Newsline summarises national and international news and commentary on political, business and financial subjects. The database is located in London and can be accessed by terminals in Britain, Europe and the US.

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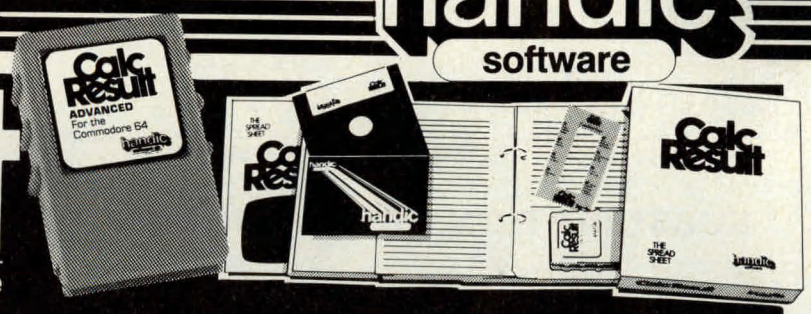

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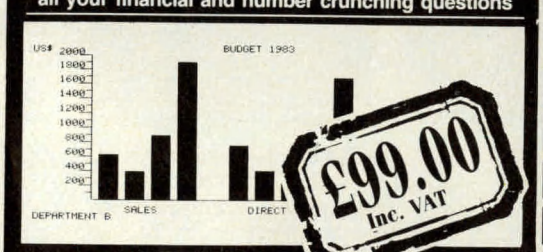

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Compunet

Progress report

"Compunet has had a quicker uptake than any other communications network," says Mark Horne speaking of Commodore's own network which has been up and running since last October.

In order to use Compunet, you need a Commodore modem. Around 4000 of these have been sold already. Many of those may still be with the dealers, but almost 1500 people have already registered onto the network.

Commodore says it is more than happy with the situation so far. Mark Horne puts forward reasons for this initial success: "The Commodore name has certainly helped. A lot of people manufacturing modems are garage-type operations. Some are larger, but nothing compared to the credibility of Commodore, or dedicated to a certain machine.

"The modem is value for money"

"People love the idea of it being totally interactive," he adds. "The modem is value for money — it's a complete end. It carries Commodore's name, but the choice is not limited."

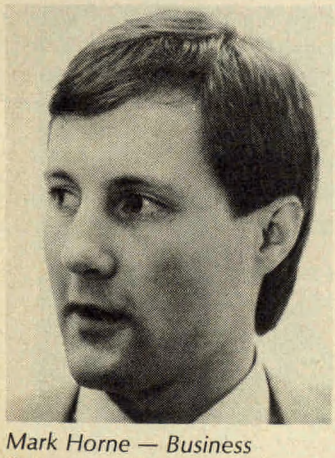
In addition to Compunet, it is also possible to access Prestel and Micronet by downloading software onto your Commodore modem.

Of all the services offered by Compunet, the most successful has, not surprisingly, been The Jungle which offers the user two-way communication.

"The Jungle has certainly been the most used section," says Horne. "End users find it very enjoyable."

It is in the aptly named jungle that users can upload anything they wish from programming tips to favourite jokes, or just have a conversation with another user. This freedom has raised questions in the national press as to whether Compunet should be held responsible for any offensive matter that could appear on the network.

Compunet carry a disclaimer to the effect that the responsibility of any obscenities appearing lies with the offender and not Compunet. Much in the same way that British Telecom would never hold itself responsible for any obscenities whispered over the telephone.



Mark Horne — Business System and Communications Manager

"Compunet has a vigilante force"

"Commodore's view is that clearly there are disclaimers stating that if there is any offensive material up there, that offender is the responsible person," says Horne. "However the system is policed — we have a sort of vigilante force! The editor of Compunet regularly looks through The Jungle and any user can complain.

"If anybody gets silly we can clear it off the screen. We can also disconnect any consistant offenders from the system," he continues. "It's a family show."

On initial appearances, it would appear to be a family affair with a registered audience reaching right across the board from kids to OAP's, men and women.

Of the 1500 registered users, Horne says that they have not met with any serious complaints. Browsing through The Jungle, CCI come across a complaint put up by a user concerning the relatively slow speed of Compunet. This has been a criticism voiced over Compunet, but Commodore made the logical decision of sacrificing high speed in favour of a cleaner, more accurate network.

A problem common to all communication networks is that of overuse. Horne says: "It's like a road — if you put another 10,000 cars on it things slow down. The system is constantly being upgraded and new user ports added.

"The capacity is there"

"The capacity is there — the system was set up to be big."

At the moment there are 12 telephone numbers to call to link up to Compunet meaning that for most people the cost of linking up is that of a local telephone call. The existing network gives a reasonable coverage. The capacity in large towns such as London or Birmingham is adequate, but the smaller ones are filling up.

One bonus that has been discovered is that the Compunet system is continually being upgraded — by the users!

"As we speak the system is being improved by the users," says Horne. "The only way in any service industry to improve the system is to use user feedback."

He continues: "It will take time to come up to other levels of information. There isn't as much information as on Prestel. However, by the fact that you can access Prestel it is already an extensive database. We are combining real time with interactivity."

Future plans for Compunet include a link up with the Travel industry opening up the possibilities of offering one-off holiday deals on a first-come first-served basis.

Bargains can already be found in Compunet's Software Park where software houses put up their programs for sale.

"Masses not classes"

"It's quality software and it's immediate," says Horne. "You haven't got to chase around computer stores. It's quality software because of the security device built into the modem."

Eighteen software houses are currently offering software. With regards to Commodore's software, it is the company's software department who decide what is put up in the Software Park. "We're putting on some of our best software to encourage sales and to prove beyond doubt that we are confident in Compunet's security system," says Horne.

Commodore's marketing policy is "masses not classes." And Commodore are expecting Compunet to become part of people's social life through sections such as MUD, Essex University's popular adventure game multi-user dungeons.

Horne says: "The idea behind the modem message is that everybody in the family can use it whether for Compunet or other services."

Sue Pearce

The 32,000 computer buffs who flocked to the Compec exhibition might have noticed, but likely not: Commodore Business Machines with business in its name and world wide notoriety in the computer industry was conspicuous only in its absence. The same is true for Computers in the City, a rather more up-market exhibition held at the Barbican Centre.

Of course, one of the reasons Commodore ignored the shows (both held in London late last year) might have been the company's concentration on the upcoming recharge in terms of influence in the business market. After all, Commodore really did not have anything stupendous to show if it had attended the exhibitions, so why expose the gaps? Nevertheless, one of the world's biggest computer manufacturers might have made an effort at staying in the public eye even if it were nothing more than current and upcoming products to give some idea that Commodore has not abandoned its previously dominant business market.

Perhaps more disturbing than the company's absence as an exhibitor was the absence of any Commodore equipment whatsoever. Of course, CCI might have missed some nook or cranny considering the more than 450 exhibitors and 13,000 square meters of stands, but of the considerable amount we saw no presenters were focusing on hardware or software designed specifically for Commodore machines. Certainly some equipment on display could be comnpatible in a circuitous way with interfaces or such additional materials, but the majority of companies seemed to be focusing on the IBM PC.

That may not be altogether bad in the long run since Commodore is putting together its own PC compatible machine at the moment and expects to make its great splash in the Spring. But the time and publicity lags meanwhile cannot but do harm to the market's awareness of Commodore as a power in business computing.

COMPEC

Applications Software

A few bright spots did appear at Compec in terms of software. Among the companies that caught our attention was a Hungarian outfit, Comporgan System House, which has designed several sophisticated applications packages for 64 business users.

Dietet is a program package for managing hospitals and sanatoriums, enabling a dietician to obtain precise and detailed therapeutical recommendation on the basis of patients' data.

Also for the public health sector is a program called Labor, developed to handle statistical data, work sheets and medical reports for physicians in clinical laboratories. A maximum of 500 patients can be processed and 3000 analyses made in more than 50 ways.

The hotel and catering trade is aided with Hotel, a program to manage services in front and back offices of hotels with no more than 200 rooms, 300 guests and 300 guests bills.

More specifically for public catering, Gastrobus produces accounts of financial turnover of commodities and stock to control medium and small size restaurants and hotels.

Financial planning experts may appreciate Quasi APR-23, a package designed to analyse long-period investment by both comparative or consistency methods.

All packages require, in addition to the computer, a 1541 floppy disk drive and some require an 80 character printer. Each program comes with a one year guarantee and a user manual with documentation.

Contact: Comporgan-Metrimpex Foreign Trade Office, 3-5 Beg u. 2, Budapest 1022, Hungary, Europe.

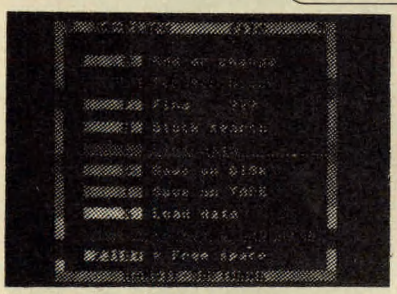
Great Little Printer

An interesting printer, particularly for its size, the GLP from Centronics is a good, inexpensive choice for office use if you don't want to spend a mint on a printer or if you could use a spare for in-office printing so your good printer can get on with more crucial work.

Costing just £200 and measuring only 13 inches across, 7.5 inches deep and 2.8 inches high, the GLP still prints in near-letter quality with various features such as multi-pass, subscript, superscript and underlining. The Centronics unit has a full 80 columns width and prints in impact dot matrix at 50 cps. With a weight of 6.6 pounds, GLP is also handy as a portable printer.

The GLP was among several new printers Centronics Ltd introduced at Compec and gave an impressive boost to the

handic software



The perfect first program

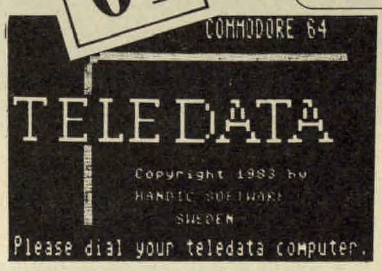
The DIARY 64 program lets you start at once because it's so simple. The program is on cartridge – so it is quick and easy to load. Data can be stored on cassette or disk.

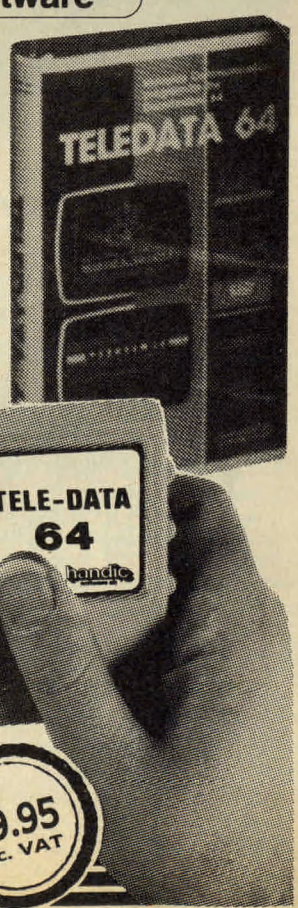
Keeping track of phone numbers, appointments, birthdays and schedules has always been a problem – now you can let DIARY 64 help you remember. The CBM 64 becomes your time-manager, you can print address labels – for Christmas cards etc. DIARY works like a big notebook with its pages appearing on screen. Using the search function you can let the CBM 64 find that address or appointment that you need.

34.49 Inc. VAT

handic software

TELEDATA 64





(Videotex communication)

Do your shopping, get the latest news, with your CBM 64! –Communicate with data bases, the bank, the grocer over the phone lines! The fast growing number of data bases – mail order, banks etc. – using Videotex can provide you with all kinds of information and services; weather, stock exchange information etc. You can be there NOW! Having access to information means great opportunities – buy and reserve tickets, buy computer programs and have them transferred to your computer via the modem, have access to sales lists for houses, cars etc. THE MEDIA OF THE FUTURE PRESENTED TODAY by HANDIC SOFTWARE.

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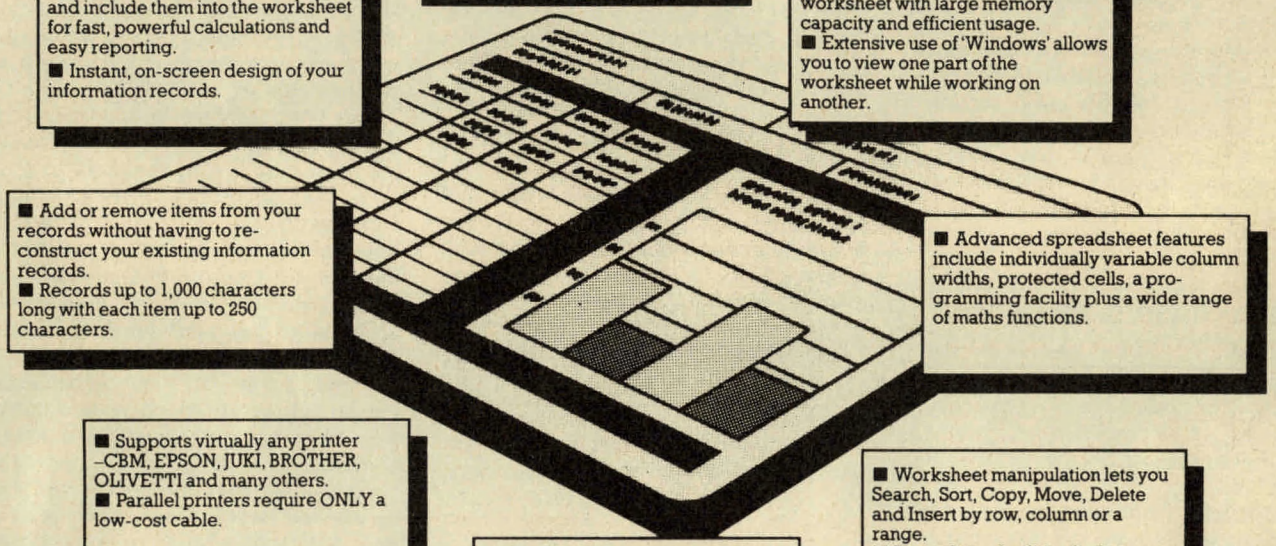

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■ Advanced spreadsheet features include individually variable column widths, protected cells, a programming facility plus a wide range of maths functions.

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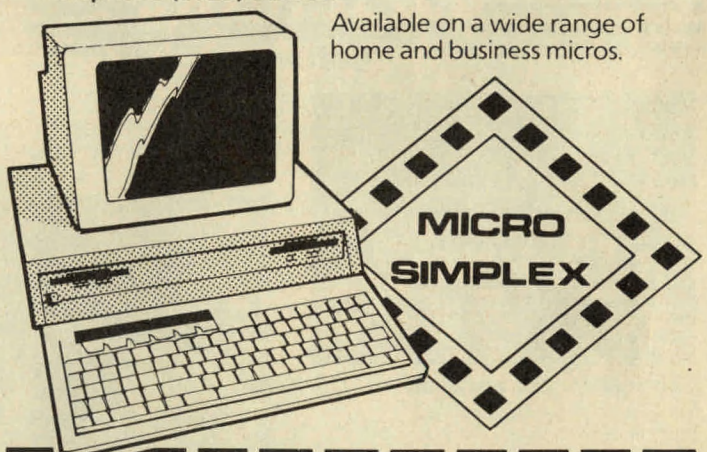

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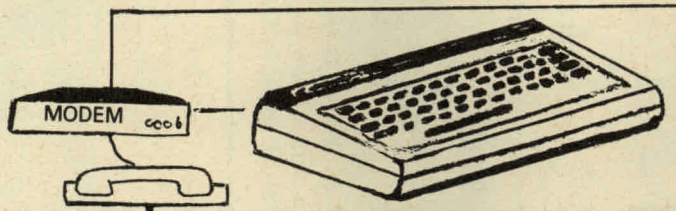
NOTE: These are just a few examples of the more than 100 information providers on the "family tree."



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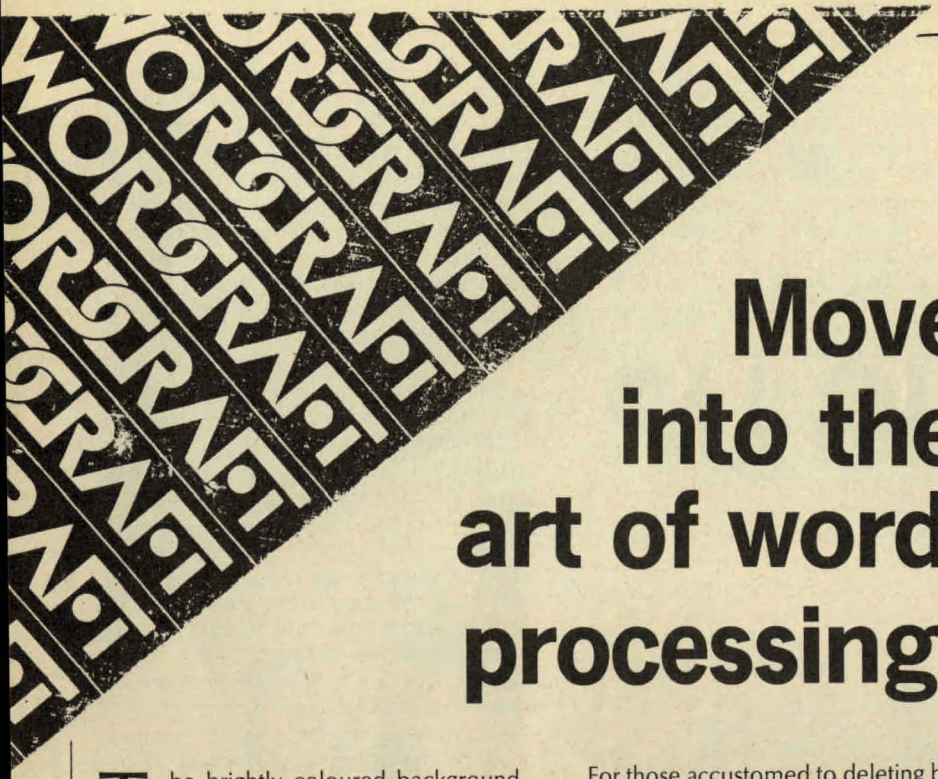
Gateway Service

Educational Database

Communications



Move into the art of word processing

The brightly coloured background, borders, lines and text are the features that first strike your attention with Wordcraft 64, but the impact of the colours is dimmed when you begin your battle to understand and control yet another word processing program.

One of the most unusual features is the comprehensive list of printers from which you choose the one you are using. Though the list is by no means complete, the most common names probably can be found among the 24 or so included. We actually tried using an older Commodore printer usually associated with the Pet computers and though it was not mentioned particularly, another Printer Definition File (as the items are called) came close enough. The purpose of the PDFs is to give the printer the correct commands for printing out what has been entered via Wordcraft.

In the unlikely condition that you don't find your specific printer listed, Wordcraft may be able to recommend another file that would work or, if necessary, program a file specifically for you at a charge of about £40. If you are the adventurous type and don't mind spending a little time exploring the concept of PDFs, you can even do it yourself with the aid of the second half of the manual. But prepare yourself for 26 pages of quite technical stuff.

Otherwise, Wordcraft is a sophisticated program that is still easy for the average user to implement. As with any package, Wordcraft 64 has its advantages and disadvantages, many of which are determined by the user's own biases, likes and dislikes.

Word wrap is one of our favourite ingredients in this disk-based program that makes reading what you've written much easier. A word that doesn't fit at the end of a line simply moves completely onto the next line rather than splitting awkwardly at the end of the screen. Text width also can be adjusted and if the width is wider than a 64 screen's 40 columns the screen scrolls to the left as you type.

For those accustomed to deleting backwards with the DEL key, the method here will take a bit of getting used to. When you use DEL at the end of the text the deletion occurs backwards as expected, but if you move into the middle of some text and try to delete you must start at the beginning of what you want to erase since the function moves to the right within text. More annoying is the insertion mode which draws a set amount of blank space and expands it 60 spaces at a time as needed but also erases to the right even if the cursor is at the end of the insertion.

Advantages, though, outweigh the inconveniences, many of which are created simply because it takes practice to become used to a program, even a relatively simple concept such as word processing. Comprehensive functions for movement within the text as well as tabulation and indentation are useful. In the case of tab you also have the option of decimal tabulation, in other words commanding Wordcraft to line up numbers with a decimal point underneath a designated tab stop.

To spice up an otherwise boring look of a composition, Wordcraft 64 offers highlighting with underlining or something called "emboldening," which means the printer strikes over each letter several times. You may also want to print one line over another, though we couldn't imagine just why. Other cosmetic features include line centring and automatically skipping lines between paragraphs.

Perhaps more important for business users is Wordcraft's ability to let you design from letters by designating "fill points." These may be filled later either automatically or manually and the program includes a function that moves you to the next fill point in the copy at your command.

All these features are available in what Wordcraft 64 calls "type mode." A push of the Run/Stop key takes you into "command mode" with its save, get, print and numerous other functions. The method here is quite straightforward and easy to understand with the standard functions such as spacing, text width, paging and justification available.

An unusual bit is the fill file which lets you fill in certain blank spaces with a particular parameter such as date, name, greeting, etc. But the form you have designed does not have to be called up on the screen. Wordcraft will automatically enter the user's text into the corresponding space and then print the document.

The accompanying instruction manual is very useful, though you may have to read closely for some obscure functions as well as a few that aren't so unusual. In terms of the list of printers that shows up at the start of the program, it would be nice to know how to access the list once in Wordcraft. The booklet does not tell you that each item is actually a Printer Definition File stored in its own right as a named file that shows up on the directory. As a result, you can refer back to the list in order to change your PDF and other variables such as lines per page before you print out.

Just another annoyance discovered while typing the previous paragraph is that the screen does not always scroll line-by-line. Rather, when the cursor gets to the bottom of the screen at the end of a page (designated by lines per page), it flips to the beginning of the next blank screen. This can be quite frustrating if you want to read even a small paragraph as a whole unit but cannot get it onto one screen at a time. One advantage of this function, however, is that you know where a page end falls in your text so you can end with a full sentence on a page if you want. The program also requires a long loading period, perhaps because of all the Printer Definition Files, and files seem to take a bit longer to save to disk than with other word processing packages we are familiar with.

As a complete word processing package, Wordcraft 64 should certainly be considered an option. The pack comes with a quick reference card in addition to the instructions manual and works with an accompanying dongle that plugs into one of the joystick ports at the side of the 64. Cost os £34.74.

Contact: Dataview Wordcraft Ltd., Head Office and Sales, Radix House, East Street, Colchester, Essex CO1 2XB. Tel: (0206) 869414.

Viola Gienger

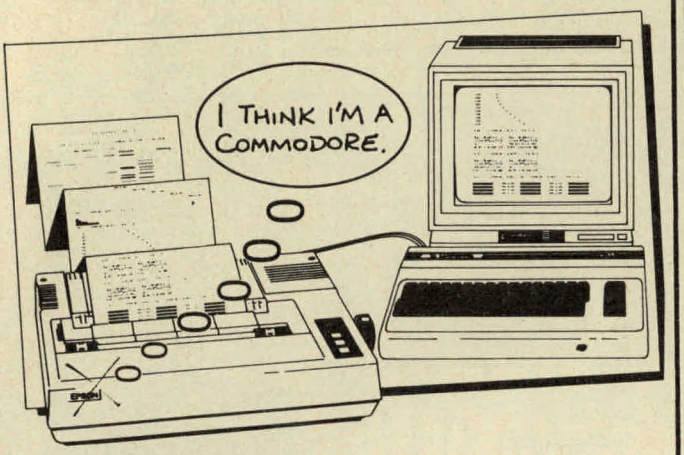
Additions

The following are additions to the list of available word processing packages published in the last CCI Business Supplement, November 1984:

Word Processor cum Letter Writer for C64 with full screen editing, 80 columns, special coding for letter headings, £8.85 cassette only, available from Cotswold Software, 8 Monks Park, Milbourne, Malmesbury, Wilts SN16 9JF.

Wordform (£75 disk) and Wordform 2.2 (£175 disk), both for 8000 series Pet machines, 120 columns, available from Landsoft, 28 Sheen Lane, London SW14 8LW. Tel: 01-878 7044.

An Epson in Commodore clothing



How many Commodore home computer owners, when faced with buying a printer, have longed to own an Epson but been put off by the problems involved? Firstly, it's not easy to connect the two together. Secondly, even when connected, it may be necessary to load driver software or the cartridge slot may be unusable. Finally Commodore-specific characteristics such as graphics and formatting commands will not be available.

Now Micro Control Systems have the solution. Just plug the Comprint circuit board inside the Epson, connect the cable supplied to the Serial I/O port on the Commodore computer and Hey Presto! The Comprint fools the Commodore into thinking it is working with a Commodore printer. All the features are there — total emulation. And it even provides a 2K buffer as well.

What's more all the additional features that have made Epson so successful, such as condenced print and other type styles, are accessible directly by the Commodore computer. For the business user the ability to use 15 inch paper (in the MX/RX/FX-100 range) and print a £ sign (or other Epson special characters) will prove invaluable.

So go on — spoil yourself. If you are the owner of a Commodore personal computer treat yourself to an Epson — and a Comprint of course!

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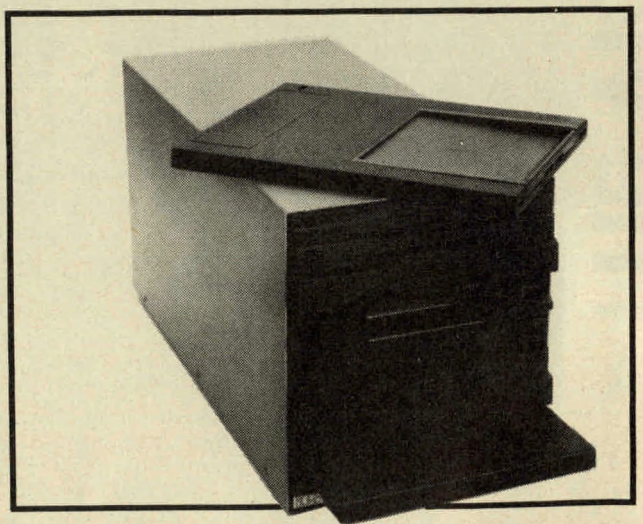
- Compatible with the Commodore IEEE-488 interface
- Equivalent to the Commodore 9090 hard disk and 8250 twin floppy disk
- Supports all the facilities of the Commodore DOSs
- Copy rate is 1 Mbyte per minute
- Supports the relative file handling of the Commodore 9060/9090 hard disk units
- Similar disk layout to the 9060/9090 units
- Supports the changing of the Commodore IEEE device number



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Unit 5, Victoria Road Trading Estate, Portslade, Brighton Sussex: Tel: (0273) 422512 Telex: 87351

STARTING UP

That part of you that's always longed to get out from under your boss's wing and fly on your own — manage your own business, be your own boss, all that — gets a bit frightened at the thought all the risk involved. So rather than plunge in without knowing what the water is like, take some time to learn step-by-step what you're getting into.

Brainpower's Entrepreneur can do just that for you while Forecaster will take you further along once you actually make that big investment. The packages are among six in the Brainpower range produced by Triptych Publishing for the C64 with the titles recently taken over by Collins Publishing's new Collins Soft arm.

Each of the titles comes on cassette or disk and contains a tutorial book and program both practically designed for easy use for studying or quick reference. In addition to the two programs we look at here, the Brainpower range includes Decision Maekr, Numbers At Work, Starwatcher and Project Planner.

In content and practical usage, Triptych has always kept the user in mind. McPherson says, "There is little to confound the innocent or inexperienced."

ENTREPRENEUR

Written by David Juster and Stuart Armstrong, Entrepreneur's accompanying text book holds your hand through the processes of predicting your first 12 months cash flow, profit and loss accounts and the concepts of apital, overheads, assets, liabilities and the break-even point. Our management expert called the package "exciting."

"The originators have taken an innovative approach to the teaching of business management," McPherson says. "A number of valuable techniques are brought together and explained as an integrated whole, indicating the relationships between each. This simple, clear approach gains over more traditional teaching where areas such as corporate planning, finance, manpower, etc. are taught as separate subjects and inter-linkages aren't apparent."

The program, written by Nikhil Sen and Armstrong, comes in two parts, one for teaching and one for actual application of the principles discussed. The teaching program starts from the bottom with developing a comprehensive plan for your potential business — structure, product, packaging, marketing, etc — with some options that you may or may not have considered. Entrepreneur asks questions about who will run the business, the basic purpose of it, what other businesses you might be competing with, what your market will be and so forth.

Each category is a detailed cross-examination of your ideas that should make you aware of any gaps in planning or logic that might be found if you present your case to the crucial people, ie bank manager. In this way, Entrepreneur likely will appeal more to the true beginner, McPherson says.

"The manual covers a good deal of technical ground, albeit very much at an overview level," he says. "The learning-through-application method is clear and helpful, although it is all rather simplistic and so very much for the first time businessman rather than the experience."

The effectiveness of the Applications program obviously depends on the planning done in advance, but the computer leads the user through each step of sales forecasts, inventory, where the break-even point is, what your cash flow will be and what sort of financing you will need along with a number of other conditions. After each step, the computer asks whether you want to print out the information on the screen and then goes on to the next step.

Helpful appendices list sources of assistance, legal aspects of operating a business and financing and give examples of business set-ups. One problem that may crop up is the entrepreneurs who want to deal in more than 10 products, for that is the maximum number provided for in the multi-product applications program.

"Technically, the model is best suited to a simple one-product-line firm — not much good for more technical, complex operations," McPherson says.

FORECASTING

Entrepreneur's writers most probably had to stop somewhere in the scope of subjects they covered. Unfortunately some of the topics left out are product pricing, costing and marketing issues, though it is mentioned that these are important factors in establishing a business. Overall then, Entrepreneur is most useful for the beginner who doesn't quite know where to begin. For that purpose the program is invaluable.

FORECASTER

This was a more difficult package to judge since many of the concepts can be vague and academic with or without actual application. But author Stuart Armstrong and fellow programmer Kevin McKeogh take, once again, a clear approach to analytical techniques for predicting factors such as sales figures, growth trends and store traffic.

"The explanation of complex forecasting techniques is good and provides a base from which the actual model obviously goes a lot further ... good stuff!" McPherson says.

The major types of forecasting methods are time series and causal under the quantitative category and several options in qualitative methods such as panel consensus, delphi and historical analogy. Though these terms float right over a novice's head at first, the text explains each thoroughly with examples.

Other concepts such as classical decomposition, which combines the effects of trend and seasonality, are also covered. This is where a computer comes into the greatest use because the amount of data involved in such forecasting calculations can be vast.

Mathematical functions including the trend, seasonality and random allowance factors are done much more quickly than by hand. Once again a typical example is given and followed through in each explanation to give you an idea of the result with each method of forecasting.

Multiple regression techniques expands on simple regression to consider up to nine variables in making a prediction. In all these cases, the computer program makes provisions for testing the model you've established. After the teaching is done, the program takes you through the forecasting process and how to apply what you've learned. A section on graphs shows that method of tracing your calculations visually.

Forecast is useful for someone who wants comprehensive and mathematically detailed information about business trends but does not want to spend a lot of money to hire a professional. You must always keep in mind, however, that any sort of forecasting is subject to change with conditions and circumstance. As in the case of Entrepreneur and perhaps more so, Forecaster's basic approach may not be suitable for the experienced manager.

"I imagine this is all grist-to-mill to most sophisticated business management packages and would think this type of program must be offered more usefully in integrated systems," McPherson comments. "It would be particularly useful, for example, as a component of the Entrepreneur package."

For that matter, there is no reason one cannot use the two packages together. The cost of £19.95 on cassette or £24.95 on disk seems minimal when considering the substantial investment the prospective business person is planning. Tens of thousands of pounds are not to be taken lightly and the person spending that amount is more aware of it than anyone. There is no room for uncertainties.

Contact: Collins Soft, 8 Grafton Street, London W1X 3LA. Tel: 01-493 7070.

Laurence McPherson
Viola Gienger

Communications

Plugging into a wider world

Prism Microproducts has introduced a fully-equipped viewdata/communications package of modem, software and peripherals that allows Commodore users access to Micronet 800 and specialised Prestel services.

The stream of communications hardware and software likely will flow even faster as the year goes on. Prism's product manager Robert Lineham says the company has left plenty of room for software expansion within the plug-in cartridge as new networking possibilities open up such as Commodore's own Compunet and British Telecom Gold.

At a cost of £129.95, the Prism viewdata system nevertheless offers a generous array of uses and facilities on the ever-growing public information network, Prestel, and Micronet 800, a "telesoftware" database that allows the user to download computer programs of all types at set charges in addition to providing news and information.

The programs on offer include games from leading software houses who sell their wares at prices often about 20 percent below retail value. Lineham says companies can afford to do this because they pay no overhead charges such as distribution and advertising costs. For example, a game that retails for £7.95 may be available through Micronet for £6. Remember, of course, that you are paying the database membership fee.

Lineham says the system is the only one on the market at this time containing Micronet downloading capability through the Micronet-approved software cartridge called Comms Pack. Another benefit is direct user-to-user communications, a facility now also available through Compunet, which operates on its own modem. Further databases available through Prestel include Homelink home banking service; the 4,000 member CitiService of financial information; Farmlink and the Prestel Education Service.

Electronic mail systems such as Telecom Gold and PSS will be available in the near future, Lineham says. Telecom Gold also provides two-way telex and international electronic mail capability. Meanwhile, Prestel offers a national Mailbox and Telexlink service to its subscribers.

"The advent of telex via computer is interesting," says Lineham. "That alone is quite exciting because your average Commodore can be a telex terminal."

"Given a bit of time, we can do most things," he continues. "Home banking on its own is not enough, telesoftware is not enough, news on its own is not enough. It's all got to work together."

The complete package includes Modem 1000, the Comms Pack software cartridge, (both designed and manufactured by OE Ltd of Penrith) the necessary five-pin DIN lead and a user manual.

Setting up is relatively straightforward. Your telephone plugs into the modem and the modem lead plugs into the telephone jack plug, which in this case must be one of the new 600 series points from British Telecom. If you don't already have the new kind of point, the supplier will arrange to get one to you when you write in for your passcode. A full-duplex transfer rate of 1200/75 allows for viewdata use. You switch to 1200/1200 half-duplex rate for user-to-user.

On top of the initial £129.95 you pay for equipment, membership in Prestel costs £5 per quarter in addition to nominal charges (eg 10 pence per page or similar) for some material that costs extra.

Micronet 800, with its more than 10,000 subscribers, charges £8 per quarter with similar charges for some items. Other services charge their own set rates in addition to the per page charge.

Unlike private systems such as Compunet, Micronet members cannot arbitrarily upload their own programs into the system. Rather, Micronet is an information provider that gets its materials from various sources with which it has an agreement.

When you are ready to use the system, a simple telephone call via the manual-dial modem connects you with one of Prestel's six main frame computers, allowing about 97 percent of Britain to use the service at the local phone call rate. This is despite the fact that four of the computers are in the London area and the other two in Birmingham.

Each main frame centre has a name so your account will be registered at the particular computer you are assigned. Special accounts can be held at different centres if necessary for people moving around the country on business, for example.

The local rate billing is a major advantage with the Prism system. Not long ago, the local rate applied only to about 60 percent of the country's computer networking population. The three percent that is still not included is billed at the a-rate, Lineham says.

The initial screen is a main menu giving options such as terminal, save frame, Mailbox, user communications and downloader. Each main option then branches into more specific possibilities such as financial news, news about Commodore, computer programs you can buy and download, etc.

If you decide to download (basically shipping a program from the service to your own computer to be stored on disk or tape), you can exist Prestel to get into Basic for the save function, then flip quickly back to continue viewing pages after the item is saved.

You actually access viewdata information screens once you have logged on to the system with a customer identity and made contact with Prestel through the telephone and modem. To get to a particular page, you call up that number, but you may also randomly select a page from a list of choices.

Other options on the main menu let you go into user to user communication with a flick of a switch on the modem and a telephone call to the 64 user you want to contact. The two of you can communicate in a number of different ways: sending files, receiving files, Mailbox or the more expensive chat mode.

Any material received whether from another user or from a database can be printed out on a standard Commodore printer, Lineham says, because a recently established patch up allows serial interface printers as well as parallel printers such as the formerly required FX80.

The Prism viewdata and communications package, fully-equipped as it is, nevertheless is not the only one available on the market. The system is British Telecom approved, however — a feature

to look for when you are buying a modem since using unapproved products makes you a target for possible prosecution. Ironically, modem mar ufacturers are allowed to market and sell their products without approval, though users cannot legally implement the modem until full approval is granted, a process that often takes about six months from the time the company submits the product.

Viola Gienger

PCN REVIEW NOV 83

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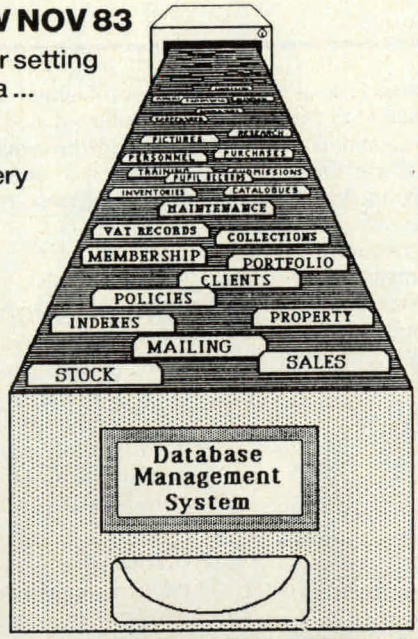

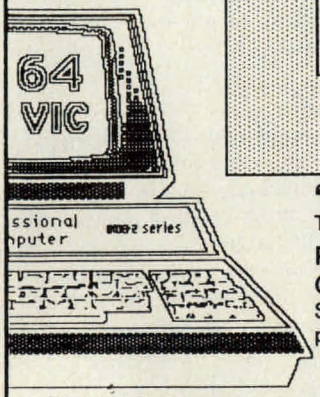

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Payroll Checklist

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Name	Super Pay Basic Pay	Payroll as part of Sky Master Accounting Suite	Pegasus Payroll	Payroll Master	Office Mate (for 8000 series)	BONUS	Payroll 2-8000 Payroll Plus-64	FCG Contractors Payroll	Payroll as part of the Integrated Accounts System for 8000 series. May be bought separately for 64 to 8000.
Price	SP-£395 BP-£125	£350 diskette £500 hard disks	Retail price never given (left to dealers)	£399 * see below	£475 + VAT	£400 + VAT	P2 £375 + VAT PP £85 + VAT	£1100 + VAT	£99.5 + VAT
Disk/Tape	Disk	Disk and Diskette	Disk	Disk	Disk	Disk	Disk	Disk	Disk
Support Hotline	YES	NO	YES	YES	YES	YES	YES	YES	YES
Manual Supplied	YES	YES	YES	YES	YES	YES	YES	YES	YES
No password levels	No password (security key)	3	1 used throughout	1	2	2	1	3	1
Individual employee recalculation for error correction	YES	YES	YES	YES	YES	YES	YES	YES	YES
User maintained Tax, NI & SSP rates	NO	YES	YES	YES	NO (MCC sends updates)	NO (Intex maintains)	P2-NO PP-YES	YES	YES
Employee numbering structure	5 digits (2 numeric)	4 Digits	4	3	—	4	5	4	max 10
Number of: Employees	Only limited by disk	Only limited by disk	500	500 on 8050 1000 on 8250	300	255	Only limited by disk	500	Only limited by disk
Departments	99	50	900	26	6	As many as required	26	200	No limit
Companies	28	50	Not fixed	Not fixed	Note fixed	1 per disk	1 per disk	1 per disk	1 per disk
Supports: Hourly paid	YES	YES	YES	YES	YES	YES	YES	YES	YES
Weekly paid	YES	YES	YES	YES	YES	YES	YES	YES	YES
2 Weekly	YES	NO	YES	NO	NO	YES	NO	YES	NO
4 Weekly	YES	YES	YES	YES	YES	YES	NO	YES	NO
Monthly	YES	YES (monthly)	YES	YES	YES	YES	YES	YES	YES
All in same Payroll	YES	YES	NO	YES	YES	YES	YES	YES	YES
Complies with SSP Regulations	YES	YES	YES	YES	YES	YES	YES	YES	YES
Last 8 weeks gross pay held	YES	YES	YES	YES	YES	Entire Year	YES	NO	YES
Last 2 months gross pay held	YES	—	YES	YES	YES	YES	—	NO	NO
Automatic averaging	YES	YES	Averages for 8 units	YES	YES	Averages for the last 8 weeks	YES	YES	NO
Absentee pay calculation	—	NO (available on an additional package)	—	YES	YES	YES	NO	YES	—
No. pay rates on payslip	Total	16	17	4	As many as required	12	As many as required	As many as required	As many as required
No. other items on payslip	of 16	8	17	2 pretax	6 pre-tax 6 post-tax	20 (pre-tax, post-tax, etc)	5 pre-tax 5 post-tax 3 overtime rates	20	4
Pension deductions fixed or %	Both	Both	Both	Fixed	Both	Both	Both	Both	Fixed
Loans made/repaid/outstanding	YES	NO	YES	NO	YES	YES	On some versions	YES	NO
No. of other deductions	5	8	17	4	12	20	13	10	6
Items narrated	YES	YES	YES	YES	YES	YES	YES	YES	YES
Reports include: Payslips	YES	YES (pre-printed)	YES (free format)	YES (PP)	YES (PP)	YES (user definable)	YES (PP optional)	YES (PP optional)	YES (PP optional)
Departmental analysis	YES	YES	YES	YES	YES	Selectable	YES	YES	NO
Coin analysis	YES	YES	YES	YES	YES	YES	YES	YES	YES
Credit transfers	YES (PP)	YES (PP)	Autopay facility	NO	YES (on bank stationery)	YES	YES (PP)	YES	NO
SAYE transfers	NO	NO	YES	YES	NO	NO	—	YES	NO
Bank summaries	NO	YES	Chequelisting	NO	YES	YES	Bank Schedules	YES	NO
SSP reporting	YES	YES	YES	YES	YES	YES	YES	YES	YES
Lists short term or leavers	NO	YES	NO	Leavers	NO	YES	NO	YES	NO
P11, P35, P45, P60	YES (PP)	YES	P35, P11, P60	P60 (PP), P35, P11 (PP)	YES	YES	P11, P35, P60	P11, P35, P60	P11
Autopay									

Combination Pack (cont'd)

JOURNAL
SCREEN/PRINT ACCOUNTS
VAT SUMMARY
STORE DATA
PRINT BATCHES/CONFIGURE
CHANGE ACCOUNT TITLES

To start using it, the user really needs to have found out something about accounting jargon first. The manual advises the really ignorant to consult a professional before starting out. In other words, don't fire your accountant — yet! On the other hand, the manual does include a rather useful introduction to the principles of double-entry book-keeping. The manual for "VAT File" says specifically that "this package is not intended to be a guide to the workings of Value Addex Tax."

After transactions have been completed, and verified, they are SAVEd to disk or tape as data files. Both programs have specimen files on disk, but of course in practice you would SAVE new files to a newly-formatted disk as soon as you started working the system. Gemini point out, rather alarmingly, that if you should overwrite the data on the program disk, it'll be impossible to run the program.

The "Final Accounts" program runs in a similar manner, containing a means of producing a trading, profit-and-loss account and balance sheet, with comparative or budgeted figures shown alongside the actual figures.

Printing

Printing is well documented; an 80-column printer is specified. There is a "configure" option allowing the page length, dis/continuous paging, ASCII code for £ sign, and device number to be altered.

The name of the company is defined while configuring the printer, surprisingly, though of course it could be incorporated in the data file name.

Several options require the printer to be attached, and a hard-copy print out is assumed before shut-down (a good practice). In fact, Gemini advise keeping the printer connected and turned on before you even RUN the program. If an interface (eg Interpod) is connected, then that should be configured before the program is RUN.

Documentation

The programs are not particularly well documented. Both have A5 booklets, the Cashbook of 24 pages, the Final Accounts of 16. As I've said, within those limitations, nevertheless both manuals have quite helpful appendices of printed examples, which are helpful.

Conclusion

Good if you know what you're doing, a bit tough if you don't, but valuable for anyone with ten fingers to count upon and a good book on book-keeping handy for understanding the jargon.

Contact: Gemini Marketing, 18a Littleham Road, Exmouth, Devon. Tel: 03952 5832.

Fred Houston

Payroll Master

The Master Payroll Package for the Commodore 8000 series

This outstanding payroll program is designed to Inland Revenue specifications for computerised payroll. All you require is a CBM 8032, CBM 8050 disk drive and a compatible printer (the 8296 version available soon).

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Name	Calcresult (C64)	Calc Result Easy (C64) Calc Result Advanced (C64)	Easycalc (C64)	Practicalc 64 (C64, VIC 20) Practicalc II (C64)	Autocount (C64)	Viza Star (C64)	Busicalc 1 (C64, VIC 20, PETs) Busicalc 2 (C64) Busicalc 3 (C64, PETs)	Worksheet (C64)	Swift (C64)
Price	£195 + VAT	CRE £49.95 inc. VAT CRA £99 inc. VAT	£50 inc. VAT	P64 £44.50 D inc. VAT £39.95 T inc. VAT PII — £69.95 D only, inc. VAT	£14.95 cass + turbo load £19.95 disk	£9.95 inc. VAT	**B1** Pet £39C, £41D, 64/VIC £17.95C, £19.95D **B2** £49.95C, £51.95D **B3** 4032/8032 £85 + VAT D 8096/8296 £125 + VAT D	£19.95	£19.95
Disk or Tape	Disk	CRE - Cartridge CRA - Disk	Disk	**P64** Disk & Cassette **PII** Disk	Disk & Cassette	Disk	**B1** Disk & Cassette **B2** Disk & Cassette **B3** Disk	Disk & Cassette	Disk & Cassette
Support Hotline	YES	YES	YES	YES	NO	YES	YES	YES	YES
Manual Supplied	YES	YES	YES	YES	YES	YES	YES	YES	YES
Self tuition program supplied	YES	NO	YES	YES	YES	YES	NO	YES	NO
Number of rows	254	CRE - 254 CRA - 254	254	250	rows × columns must not exceed 2000	1000	**B1** 99 max **B2** 999 max **B3** 250 on 32K 750 on 8096/8296 999 on C64	rows × columns must not exceed 1,500	254
Number of columns	63	CRE - 64 CRA - 64 * CRA has 32 pages	63	100		64	**B1** 99 **B2** 125 **B3** 200		26
Maximum column width	38	32	37	**P64** 38 **PII** 100	Variable (because of the above)	34 digits	18 digits	10 digits	?did not know
Help key	YES	CRA - YES	NO	**P64** NO **PII** YES	NO	NO	NO ("not needed")	YES	NO
Menu driven	YES	YES	NO	YES	NO	YES	"single menu for all options"	YES	YES
Number of arithmetic functions	30	All those on C64 BASIC	33	**P64** 22 **PII** 34	Same as C64 BASIC	30	**B1** 9 **B2** 23 **B3** 23	6	—
Number of commands	100	50 +	17	—	17	50 +	**B1** 11 **B2** 17 **B3** 18	20	50 +
"What if" facility	YES	YES	YES	YES	YES	YES	YES	NO	YES
Memory remaining indicator	YES	YES	YES	YES	NO	YES	YES	YES	NO
Data Base included	NO	NO	NO	YES	Can be used as a database (didn't really understand the question)	Package includes: Spreadsheet Data Base Graphics	YES	NO	NO
Will integrate with ...	—	—	Easyscript	**P64** Any word processor **PII** Practifile	—	Superbase & most word processors	**B3** Easyscript & Vizawrite All create files which can be read by other software	—	—

SPREADSHEET

PRACTICALC II, for Commodore 64, £69.95 (disk)

Everyone who's had a spreadsheet for any time at all must have realised that they are also the owner of a word processor. Of a fairly rudimentary kind, of course, but if it can align text left or right or centred within a cell, move blocks of cells, copy them, or delete them, then these are the sort of text formatting commands that one expects to find within a word processor, after all.

Of course, the amount of text that can be accepted within a spreadsheet cell is usually limited to the width but lately a number of spreadsheets (eg Swift, Busicalc 3, Vizastar, Practicalc) have provided the facility that if text is too long to fit into a cell, it is allowed to "spill over" into adjacent cells, as long as they are empty. It is this "long label" facility which Practicalc II has developed to give it quite a powerful word processing ability to a maximum line-length of 100 characters. Since most printed lines are 80 characters wide or less, this should be enough for anyone.

Practicalc II is actually a more powerful version of the original Practicalc spreadsheet for the VIC and 64. It has most of the common WP facilities, including word-wrap, block move, copy, insert and delete. It is possible to LOAD a spreadsheet into part of such a document so that it may be included. Such a sheet is still "active", so that its formulae, values or other contents may be modified for the purposes of the main document, without, of course, affecting the sheet on disk.

Practicalc II comes on disk with two manuals: the original manual as written for Apple, plus a 24-page C64 supplement.

There is a special configuration program which allows re-definition of the screen colours and the default settings — which can always be modified during work on a sheet. The quickest way to get Practicalc II up and running is with the command:

LOAD "P,8,1<RETURN>

As a spreadsheet, Practicalc II is virtually identical with the earlier versions, whose files it can read (though it's not downwards compatible: Practicalc II files can't be read by Practicalc). The number of cells is the same: maximum 100 horizontally by 250 vertically, a total of 25000 (though memory would undoubtedly be used up before you reached that theoretical maximum). To use the word-processing option, the user enters the OPTIONS menu (by pressing "/" then "0") and chooses the "long label and auto-enter options.

The latter provides an automatic wrap-round when the figure chosen is selected, the cursor being moved to the beginning of the row below. Theoretically, any length between 1 and 99 characters can be chosen, but if the text spills over the edge of the screen (if the cursor is moved to the right to see the end of the line) the text disappears as soon as the cursor moves off the first column of the line. It will not reappear until the cursor is back on that column.

Practicalc II does have an 80-column mode, which does not need a special card, but it is quite hard to read, even on a good colour monitor, especially in the dark-on-light blue default colour scheme. It might be easier to read if this was modified with the CONFIGURE program supplied, but there does not appear to be any way of doing this while the sheet is running.

Probably the best way out would be to invest in a good green screen monitor (Philips do one for less than £100) because any business program is usually better if the higher resolution of a monochrome monitor is employed.

Practicalc II can read files from Visicalc and also DIF (data interchange format) files produced by Visicalc and other spreadsheets and any sequential ASCII file produced by other programs, eg word processors. In such a WP file, if the original has a line-length of more than 100 characters, the extra characters are wrapped round to the line below. Any control, characters are stripped out automatically.

Conclusion

Practicalc II is a powerful and versatile spreadsheet with the additional value of being able to perform basic word processing tasks, including a kind of mail merge or label print. While this is unlikely to provide an adequate substitute for a proper WP program, it does allow for simple explanatory text to be included in spreadsheets, and for spreadsheets to be included in short documents. It certainly comes cheaper than Three-Plus-One!

Combined Business Pack

COMBINATION BUSINESS PACK NO 1, for Commodore 64 — £59.95 (tape), £64.95 (disk)

This almost-integrated package consists of a cashbook program and an accounts program, plus a special VAT program, all available on either disk or tape.

PRACTICALC II
POWERFUL, VERSATILE, EASY-TO-USE, HIGH-SPEED ELECTRONIC SPREADSHEET, WORD PROCESSING, DATABASE AND GRAPHIC CAPABILITIES
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Gemini
Serious Software
Combination Business Pack No.1
Contains Cash Book, VAT File and Final Accounts for the Commodore 64
COMMODORE 64
40 Disk Version

There is no provision for calculating VAT as items are entered, allegedly on the advice of HM Customs & Excise (who may well know that the next Budget will produce more complicated VAT rates than the current reasonably simple 15 per cent) and no invoice generation from within the system.

Each program is written in Basic and is LOADed with the usual command. On running the "Cashbook" program, the user is presented with a ready-formulated system into which data can be input right away, with a very comprehensive list of 199 nominal account codes and titles. These names and codes can be changed, and there are just under 100 blank codes. If no titles are entered into these codes, then they are skipped while the system is running.

There is a set of codes for limited companies, and an alternative set for sole traders or partnerships. Obviously, both would not be required at the same time.

This is very useful for the beginner to accounting, though they are fairly obvious. Certain account codes are restricted to receipts, others to payments, and some to both.

The main menu gives the following options:

EXIT PROGRAM
RECEIPT TRANSACTION
EXPENSE TRANSACTION

Grappling the in

This printer interface is claimed to be the ultimate for the Commodore 64 with the largest number of commands available to the user intent on coupling the micro to a centronics parallel type printer.

The unit is nicely packaged in a windowed box and this element of visual attraction is carried over into the device itself. The circuit board is mounted on a solid plastic base with a perspex cover over the ROM's so everything can be seen — a refreshing change from the anonymous "black boxes" we normally see as machine add-ons.

The interface plugs into the 64's expansion port but there is a female expansion slot at the rear of the unit so that ROM cards can be "daisychained" onto this bus. Better still is a motherboard which I have successfully used to access the Commodore Modem. There is a single DIN socket on the side into which the serial device lead from, for instance, your disk drive is inserted and a flying lead from the interface is plugged into the 64's serial socket. A generous length of ribbon cable emerges from the rear of the unit and terminates in a centronics type plug and this connects the interface to the printer.

The firmware contents of the device yield a surprise in the shape of 6501 CPU in addition to the expected 2732 PROM and 7400 IC. However, the remaining chip is unidentified.

The 32-page operating manual, although not wide and somewhat reminiscent of one of those cheap business giveaway diaries, contains most (but not all, more of which later) of the necessary information to get the interface up and running. There is a general assumption by the manual's author that the purchaser is familiar with printers which is a serious error on his part since in most cases the two tend to be acquired together and represent a dual challenge to the user's patience.

"Four modes of printer operation"

There are four modes of printer operation for this interface, namely EMULATION, PROGRAM LISTING, TRANSPARENT and TEXT. Additionally there are provisions for screen block graphics or text dumping to the printer or high resolution screen dumping. The printer modes can be selected from the keyboard or by dip switches within the interface with the sole exception of TEXT mode. The dip switches also can be configured for various different manufacturer's printers such as Epson, Gemini, Brother etc.

The modes themselves are relatively descriptive: EMULATION indicates that the printer, of whatever type appears to the 64 to be a Commodore 1525 and thus the full set of Commodore's unique graphic characters can be printed. Similarly Commodore style printer commands are accepted by the printer itself so this mode could really be thought of as the beginners mode.

PROGRAM LISTING mode is a very useful tool for the Basic programmer, as instead of the appearance of the peculiar Commodore graphic symbols for shifted keys, etc, a description of the actual key pressed is shown in brackets.

TEXT mode is principally used for word processing programs where the output to the printer is alphanumeric. In this mode the Commodore ASCII codes are translated into standard printer codes.

TRANSPARENT mode is the most useful of the bunch. This enables keyboard selection of screen dumping to the printer of either low resolution block graphics or text, or alternatively the contents of the screen when this is in high resolution mode.

Also direct commands to the printer in terms of the printer manufacturer's control codes are possible in this mode. So if your printer is an all singing and dancing machine then you can exploit it's capabilities to the full.

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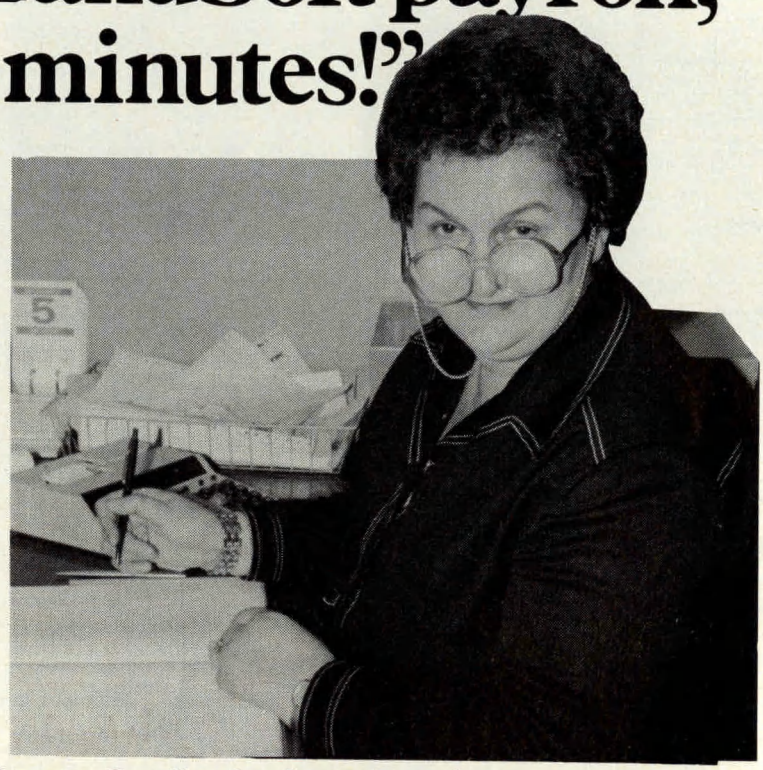

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terface problem

"Each mode has it's own attraction"

The results of each mode are, to a large extent, dependant on the ability of the individual printer. Each mode has its own attraction and some suggested examples are given in the user booklet. However the booklet is weak in some areas as mentioned earlier. Certainly this interface is a very clever device and a lot of information is, I feel, left out of the booklet.

This is demonstrably true where assembly language routines involving the interface are concerned. There are only two pages of assembly language listings out of a total of 31 printed pages. Surely the type of purchaser who demands this level of sophistication in a printer interface is going to be reasonably literate in assembly language and should be better catered for?

In use I have found the GRAPPLER to be a very powerful tool which can at times seem to be just a bit too clever for itself. Certainly it lives up to its claims in the blurbs and, apart from the meagre user manual, there are only two major and two minor drawbacks that I have uncovered in my own system.

The first one is that in screen dumping mode the interface claims some 8k of memory at location 49152 onwards. OK, this is not in an area that is accessable to Basic programs but the Grappler firmware is apparently NOT relocatable which brings its own problems when using additional ROM's particularly when these autoboot. Switching out this mode solves the problem and Commodore's own modem runs quite happily along with all of my other ROM's except the one other major weakness of this interface, namely the Z80 CP/M card. Technically I think this is due to the fact that some of the GRAPPLER's permanent memory locations reside in the zero page area of the 64, and this page is of critical importance in the configuration of any CP/M implementation. Again the ability to redefine these locations would have overcome this.

"Criticisms are minor"

However, the other criticisms are minor and one has been rectified by the manufacturer, that of the small size of the print buffer which I believe is a tiny 2k. This means waiting for the printer to catch up with the 64 and is noticeable even with my Epson RX-80F/T with a claimed 160 characters per minute.

You can now buy an Orange Micro print buffer of something like 16k as an add-on to the GRAPPLER although I have not seen this advertised in this country yet. The buffer can also be bought self-contained on a GRAPPLER, but it should be noted that the buffer option is nearly as expensive as the interface itself.

Probably the best option in the printer buffer field is the printer manufacturer's own, certainly EPSON supply them, but not all manufacturers do. The benefit here being that you have enhanced the printer's facilities and not the system's: the former can be transported if you decide to change micro, the latter cannot.

The other complaint is that high resolution screen dumps can only be enabled if the source program is in Basic and can be halted.

Conclusion

So there it is, if you want to interface and fully exploit your centronics printer then the GRAPPLER is for you. The bad news of course is, as always the price, and being an import from the USA (why does the best stuff for the 64 have to come from abroad?) this is no exception. Presently the device retails for £109.00 + VAT, so after you have snorted the smelling salts from your credit card take a look at the GRAPPLER, I don't think you will be unimpressed.

Contact:

P&P Micro Distributors, Newhall Road, Rossendale, Lancs. BB4 6JG. Tel: 0706 212321.

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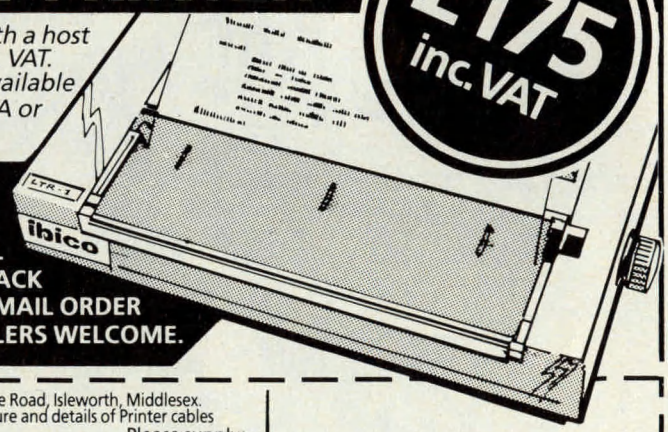

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